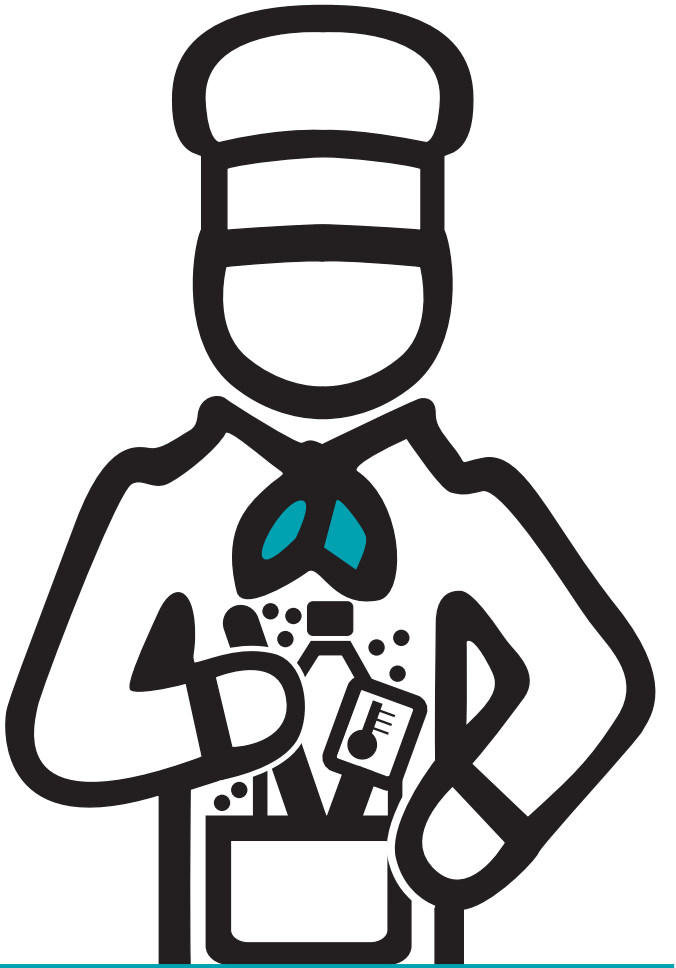
KEEPING YOUR FOOD SAFE



FOOD SAFETY

THE KEY INGREDIENT

FOOD SAFETY - THE KEY INGREDIENT

Americans enjoy the safest, most abundant, and one of the most economical food supplies in the world.

The Virginia Department of Agriculture and Consumer Services has many programs that ensure the safety and wholesomeness of Virginia-produced food, but it can't control one very important aspect of the food chain - a significant part of food safety rests with the way consumers handle and store food once it is purchased.

This booklet details what the Virginia Department of Agriculture and Consumer Services and other agencies of government do to assure safe food. More importantly, it tells you how best to protect your health and the health of your family through safe food handling.

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FOOD SAFETY MATTERS TO EVERYONE

Food safety begins when seed goes into the ground and continues through all phases of food production and preparation. Many different segments of the food system share the responsibility for food safety: farmers, processors, wholesalers, retailers, regulatory agencies, and consumers. In addition to our "front line" responsibilities as a regulatory agency, we at the Virginia Department of Agriculture and Consumer Services (VDACS) also work with federal government agencies such as the United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), and other state agencies such as the Virginia Department of Health (VDH). Our cooperative efforts ensure that consumers consistently receive food of the highest quality.

ROLE OF THE CONSUMER

No matter how much the food industry is regulated to ensure a safe food supply in the marketplace, you must properly store and prepare the food you buy so that it remains safe.

Food scientists tell us the greatest risk of harm from food comes from some naturally occurring microscopic organisms, such as bacteria and viruses, which can cause severe illness.* Symptoms of foodborne illness frequently include fever, chills, abdominal cramps, vomiting, and diarrhea. In some cases, nerve damage and death can result.

The basic rules for reducing risk of foodborne illness—cleanliness (wash hands and surfaces often), separate (don't cross contaminate), thorough cooking (cook to the proper temperature), and proper temperature control and storage (refrigerate promptly)—must be followed at home to prevent disease-causing organisms from reproducing in numbers sufficient to cause illness.

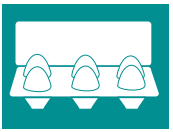
We and other authorities such as the FDA, USDA, and the Virginia Department of Health offer the following tips to help consumers practice food safety and prevent foodborne illness.

* *See page 18, for more detailed information regarding the source, symptoms, and prevention of food poisoning.*

Shop wisely. . .

- Try to make food shopping your last errand before going home. This reduces the time your perishable groceries will be without refrigeration.
- Buy the best quality, freshest foods available to you. Let your eyes and your nose guide your selection.
- Choose packages that are not torn, broken, or past *Sell By* or *Use By* dates (if available).
- Select frozen and refrigerated foods just before going to the checkout register.
- Buy pasteurized milk and egg nog. Avoid raw milk from the farm and homemade egg nog with uncooked eggs.
- Avoid frozen foods that are not frozen solid or cans of any food that are bulging, leaking, dented, or rusty.
- Choose Grade A or AA eggs that are refrigerated and uncracked; buy only the amount needed for one or two weeks.
- Pack raw meat and poultry products separately from other groceries; prevent their juices from dripping on other foods.

Store perishables promptly. . .



- Avoid leaving frozen or refrigerated food in a warm place, particularly in your car. Transport perishable foods in an ice-packed, insulated cooler during summer.
- Refrigerate all products marked *Keep Refrigerated*; freeze those with *Keep Frozen* labels.
- Refrigerate eggs in original carton.
- Leave product in store wrap for identification in case of problems. Re-wrap in plastic if package is torn or leaking (especially raw meat and poultry); double wrap in aluminum foil or freezer plastic if product is to be frozen for more than two to three months.
- Date all undated products and rotate older products to front of shelf.

• Always store foods in clean, dry places away from household cleaners and where pets, rodents, and insects can't get at them. Do not store foods under the sink.

Keep a clean kitchen. . .

• Clean kitchen counters, cutting surfaces, dishes, and utensils before and after preparing food; scrub with hot water and soap; rinse. Bacteria lurk in cracks in wood, so when you can, substitute glass, plastic, or stainless steel for wood.

• Launder dish cloths and towels often; replace dish sponges every few weeks, earlier if dirty or mildewed. Soak sponges in a mild bleach solution between uses.

• Take your refrigerator's temperature periodically; use an appliance thermometer to check for proper temperature. Keep refrigerator at 40 degrees F or below; keep freezer at 0 degrees F or lower.

• Clean your refrigerator and freezer regularly; discard items when they exceed recommended storage times. (See *How Long Will It Keep?* chart page 17.)

Practice good hygiene. . .

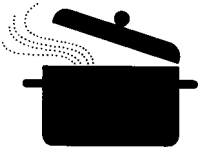
• Always wash your hands with soap and very warm water (make a lather) before each food preparation, especially after using the bathroom or handling pets, diapers, garbage, or raw food.

• Cover your mouth and nose and turn away from food when you cough or sneeze; wash your hands again before resuming food preparation. Avoid handling food when you know you're ill, particularly if you suffer from vomiting, abdominal cramps, or diarrhea.

• Bandage small cuts on your hands. Avoid handling food if you have infected cuts or sores on your hands.

• Keep clothing free of human and animal hair. Hair can fall into and contaminate the food you prepare.

Cook foods thoroughly. . .



- Cook foods at recommended temperatures to kill disease-causing micro-organisms; use a meat thermometer to check internal temperatures of foods for "doneness." (See *Cooking Chart,* page 15.)
- Cover food to be microwaved with glass or waxed paper (heated plastic wrap should not touch food); stir and turn for even cooking; use cookware appropriate for microwaving.
- Cook meat, poultry, fish, egg dishes, and casseroles thoroughly in one process. (Food scientists recommend cooking poultry stuffing in a separate dish, rather than in the bird.)
- Serve hot foods hot—hold above 140 degrees F.
- Reheat cooked foods (processed or refrigerated) to 165 degrees F; bring soups, stews, gravies to a rolling boil.
- Always cook eggs and shellfish thoroughly. Remember—"If it's in a shell, cook it well!"

Know the cold facts. . .

- Follow the 2-Hour Rule: Don't leave perishable foods unrefrigerated for more than two hours.
- Keep cold foods cold—below 40 degrees F. or below. (See *How Long Will It Keep?* chart page 16.)
- Thaw frozen foods in the refrigerator, microwave, or under cold water in a watertight wrap, not on the kitchen counter. Never refreeze frozen food that has completely thawed; cook it before freezing it again.
- Refrigerate meat while it's marinating.
- Refrigerate leftovers as soon as possible; cover them as soon as they have cooled. For quick cooling, divide large volumes of soup, stew, gravy, and casseroles into small containers no more than four inches deep. Cut large meat roasts into pieces no more than three inches thick.

• Discard leftovers within four days of cooking, hard-boiled eggs within seven days.

• Refrigerate the following after opening: mayonnaise, salad dressings, ketchup and other condiments, fruit preserves, and canned goods. Always follow label directions for proper storage of food!

Handle raw foods carefully. . .

• Keep raw and cooked foods (and their juices) separate at all times. This prevents bacteria on raw food from contaminating cooked food.

• Thoroughly wash your hands, food preparation surfaces and utensils, especially cutting boards, before and after each preparation of raw meat, fish, poultry, eggs, fruits, or vegetables. Use hot water and soap.

• Avoid eating raw or partially-cooked eggs and seafood. That includes "tasting" uncooked mixes containing these raw foods.

• Wash fresh fruits and vegetables with plain water (loosen dirt with a scrub brush); discard outer layers of leafy vegetables. Do not use soap.

SIX EASY STEPS TO LABEL READING

More than half of our food supply consists of foods that are commercially prepared (processed) and packaged. Their manufacture involves combining a variety of ingredients in a number of different ways and packaging the end product so that it is protected and the package is attractive to consumers. Since we cannot see, touch, or smell what's inside the can or box, we must rely on the label for detailed information about the package contents.

The Virginia Department of Agriculture and Consumer Services, USDA, and FDA share the responsibility for enforcing a system that encourages accurate information on product labels. The following list identifies both the required and optional parts of a label.

1. Product identity and net quantity of contents

Consumers usually see this information first. Each product must have a common or appropriately descriptive name and any illustrations must be an honest portrayal of the actual contents. Illustrations showing foods not present must be identified with the declaration *Suggested Serving*. The total amount of edible contents in the package is identified by the net quantity of contents statement. (Solids are identified by weight; liquids by volume.)

2. Company name, address, and product lot number

This information is necessary to identify the manufacturer, packer, or distributor of the product. The lot number, often imprinted or embossed on the top of a can, jar, or package, is very helpful in tracing products if a problem arises.

3. Inspection stamps and special symbols

Virginia or USDA stamps are proof that meat and poultry products have been inspected.

4. Nutrition information

This is helpful if you have a special dietary need or are interested in good nutrition. Nutrition declarations provide such information as the amount of calories, protein, carbohydrates, fat, and sodium contained in a designated serving of the product. The declaration also provides U.S. Recommended Daily Allowances (US RDAs) for specified vitamins and minerals. The Nutrition Labeling and Education Act of 1990 made nutrition labeling mandatory on all packaged food products.

5. Ingredient information

Components of the product must be identified. The predominant ingredient is always listed first. All other ingredients including additives (preservatives, colorings, flavorings, extenders, etc.) follow in their order of predominance by weight.

6. Special handling instructions and dates

Often the package label contains directions such as *Keep Frozen, Keep Refrigerated*, or *Ready-to-Eat*, plus various action dates which recommend the last day the product should be sold (*Sell By*) or used (*Use By* or *Expiration*).

Special handling instructions for potentially hazardous and perishable products are mandatory. Action dates and cooking instructions are optional.

IN CASE OF ILLNESS FROM FOOD

The Virginia Department of Agriculture and Consumer Services and the Virginia Department of Health suggest some general guidelines to follow if you suspect foodborne illness.

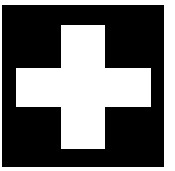
Preserve the evidence. . .

• If a portion of the suspect food* is available, wrap it securely in a heavy plastic bag and place it on ice in a secure container marked *DANGER*. Write down the name of the food, when it was consumed, and date of illness. Store away from children, pets, and other foods, in a location where it will not be mistaken for edible food.

**The sample may be useful to medical personnel treating the illness and/or health authorities tracking the problem.*

• If available, also save the container, wrapping, and any metal clips (e.g., poultry) used on the original package. This is where valuable information about the processing plant, lot number, and manufacturing date is often provided.

Seek treatment as necessary. . .



• If symptoms are severe or the victim is quite young, pregnant, elderly, immune-compromised, or has a chronic illness, seek professional medical advice or care immediately.

• It is very important to drink liquids such as water, tea, apple juice, bouillon, or ginger ale to replace fluids lost through any episodes of diarrhea or vomiting.

Call the local Health Department or the Virginia Department of Agriculture. . .

Whenever you suspect food as the cause of illness, call the proper authorities. If the food was from a retail store, contact the Virginia Department of Agriculture. If it was purchased from a restaurant, contact your local Health Department. Try to have the following information available when calling:

• Your name, address, and daytime phone number

• The name and address of the event, party, or establishment where you consumed or purchased the suspect food

• The date that the food was consumed and/or the date of purchase

• If the suspect food is a commercial product, have the container or wrapping in hand for reference while you are on the phone. Most meat and poultry products have either a USDA or a Virginia inspection stamp and a number that identifies the plant where the product was manufactured. Many products also have a code indicating when the item was produced. This information can be vital in tracing a problem to its source.

Other authorities to call

• Phone numbers for other authorities involved with food safety are listed on page 27. In special cases you may want to call one of these agencies.

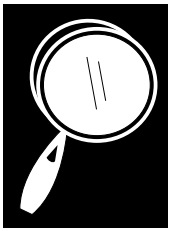
FOOD SAFETY: ROLE OF THE AGENCY

The Virginia Department of Agriculture and Consumer Services (VDACS) is directed to assure consumers that the food purchased in Virginia is safe, wholesome, and properly labeled.

The Department has developed a surveillance system which enables it to regulate the safety of Virginia's food supply. Elements of the system are: authorization/ licensing, inspection, sampling, testing, and enforcement.

Authorization & Licensing . . .

All individuals and establishments involved with the distribution and manufacturing of food and milk in Virginia are required to be under inspection before offering their food products for sale. Some of these establishments are required to be licensed (food service establishments such as restaurants fall under the Virginia Department of Health's jurisdiction). Grocery stores, meat and poultry slaughter and processing facilities, other food processing facilities, food warehouses, and all other establishments that fall within the Department's jurisdiction must demonstrate compliance with sanitation regulations, as well as safe food handling, processing, and storage procedures.

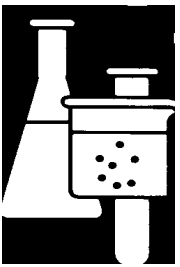


Inspection . . .

Inspections take place where food is produced, stored, shipped, processed, or sold to check compliance with food safety and labeling laws. The potential hazard of the food or the process determines how many inspections are done annually.

Approximately 25 meat and poultry inspectors work statewide in VDACS' Division of Consumer Protection. They conduct inspections in more than 60 official slaughter and processing establishments and more than 120 custom exempt plants. They also evaluate the health of animals before slaughter, enforce humane slaughter laws, inspect carcasses and viscera for wholesomeness, collect samples for microbiological analysis, conduct laboratory tests for antibiotic residue, evaluate facility sanitation, monitor meat and poultry processing operations (cutting, grinding, curing, smoking, etc.), and ensure accurate labeling.

The Office of Meat & Poultry Service's Compliance Unit is the enforcement arm of meat and poultry inspection, collecting evidence for court cases and having seizure powers.



Approximately 25 Food Safety Specialists working statewide in the Division of Consumer Protection conduct inspections in close to 10,000 food establishments. These include grocery stores, supermarkets, manufacturing/ processing operations, food warehouses, and other types of food establishments.

Food Safety Specialists routinely collect food samples and send them to the Division of Consolidated Laboratory Services for analysis. However, they are empowered to seize food or seek a court order closing a facility when a violation found during an inspection warrants immediate public safety action.

Approximately 12 dairy inspectors working statewide in the Division of Consumer Protection regulate milk sanitation from the state's more than 900 Grade "A" dairy farms. A processing and manufacturing milk specialist inspects dairy product manufacturing at the state's manufactured milk plants.

Sampling. . .

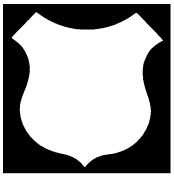
Inspectors routinely take food samples during inspections, or if violation of state or federal standards is suspected. They file inspection reports and send samples to the Division of Consolidated Laboratory Services, as well as the Department's regional labs, FDA and USDA labs.

Testing. . .

The Division of Consolidated Laboratory Services' scientific staff conducts physical, chemical, and microbiological analyses of food samples. Hundreds of different types of tests can be performed in this state-of-the-art facility, including tests for foreign substances, pesticide residues, antibiotics, and other adulterants. Official standards of testing are the FDA's *Pesticide Analytical Manual*

Official Methods of Analysis of the Association of Official Analytical Chemists, and the *Standard Methods for the Examination of Dairy Products*.

Many samples are taken when violations are suspected, so the samples are biased—the inspectors were specifically looking for problems. Even so, more than 80 percent of the 2,000 samples tested each year are free of adulteration and misbranding.



Enforcement. . .

The Federal Food, Drug, and Cosmetic Act of 1938 and its amendments, the Federal Meat Inspection Act, and the Poultry Products Inspection Act serve as the patterns, but through the years, regulations specific to Virginia have been added. Many Department officials and inspectors are commissioned FDA officers and others are licensed by the USDA.

The Department has broad powers for enforcing food protection laws. Depending on the severity or frequency of the violation, staff can bring criminal charges, close establishments through injunctions obtained in Virginia courts, and seize, embargo, or destroy suspect products.

APPLYING THE SYSTEM

The Virginia Department of Agriculture and Consumer Services inspects the food you eat every step of the way including the grocery store, warehouse, processing plant, receiving and shipping points, and the farm.

At the grocery store. . .

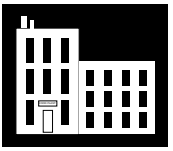
Food Safety Specialists routinely inspect the close to 8,000 grocery stores throughout the state to check sanitary conditions, food preparation procedures, storage conditions, and labeling. They consistently collect samples of fresh and in-store packaged and processed foods and send them to the Division of Consolidated Laboratory Services for analysis. Food Safety Specialists also make investigatory visits, many of which are prompted by consumer complaints.

Regardless of the initial purpose of the inspection, if

the specialist's eyes or nose detects anything out of order during the visit, the inspection will broaden. Any infractions of the law will trigger enforcement action. Food Safety Specialists are quick to spot unsanitary meat grinders, meat or milk cases which are too warm, and unsafe food handling practices. Evidence of rodent or insect activity at the store will bring enforcement measures into play, as will inaccurate record-keeping and improper facilities to allow employees to practice good personal hygiene.

When warranted, Food Safety Specialists can place entire food shipments under seizure until diagnostic testing is complete and the inspector either clears the food for sale, puts some condition on its sale, or orders it held for destruction following a hearing. The inspector may also initiate "traceback" investigations to other points in the food distribution system (i.e., producer or processor).

At the warehouse. . .



Sanitation and storage conditions are the main focus of inspections at the more than 550 warehouses located throughout Virginia. Food Safety Specialists conduct visual inspections of the physical plant to establish that it is in good condition, clean, dry, and free of animal or insect infestation. They check refrigeration equipment, take air temperature readings, look for evidence of spoilage, and collect food samples for physical, chemical, and microbiological analyses. When violations occur, they take enforcement action, which sometimes includes food seizures.

At the processing plant. . .

Virginia has approximately 1,600 food processing facilities. At each of them, Food Safety Specialists check for proper sanitary conditions. Since fresh food is undergoing change here, the process and equipment used are under close scrutiny.

At the receiving and shipping points. . .

Approximately 300 farm product inspectors, most of whom are also certified by the USDA, monitor a variety of fresh farm products at receiving and shipping points within the state. Their surveillance inspections verify the quality of these products and make sure they have been marked with the appropriate USDA grade before delivery to processors, wholesalers, and retailers. If grade or label is violated, the inspector will detain the product until it meets specifications.

Interstate milk shipping is also carefully monitored. To assure that milk crossing state lines is uniformly wholesome and safe, the FDA certifies Department milk rating officers and lab survey officers to qualify and rate dairy operations and oversee milk testing facilities. Anyone transporting milk in Virginia must be licensed by the state, and all vehicles and equipment used for that purpose are subject to inspection by the Division of Consumer Protection, Office of Dairy and Foods.

At the farm. . .

All food protection programs begin at the farm. Safe, affordable food depends on healthy plant and animal stock, plus efficient farming practices. Virginia agriculture is diverse, and the Virginia Department of Agriculture and Consumer Services' on-farm programs deal with commodities ranging from broccoli to peanuts, beef, pork, poultry, or specialty products.

The Office of Dairy & Foods permits and inspects all grade A dairy farms in Virginia. Routine sampling is conducted to monitor the quality of the raw milk to make sure it is within standards.

The Department issues permits to those who receive, sample, and test milk from the farm. Milk samples taken from individual farms are routinely screened for the presence of bacteria, white blood cells, added water, and antibiotic drug residues. Approximately 48,000 tests of farm milk are conducted annually. If levels of violative substances indicate a source of milk is unsafe, the milk is excluded from production.

COOKING CHART

Cooking raw food to an internal temperature of 160 degrees Fahrenheit usually protects against foodborne illness. Some foods are considered more tasty when they are cooked to a higher internal temperature. (Always insert meat thermometer at thickest part of food.)

Egg & egg dishes:

Eggs	Cook until yolk & white are firm
Egg casseroles	160° F
Egg sauces, custards	160° F

Ground meat & meat mixtures:

Turkey, chicken	165° F
Veal, beef, lamb, pork	160° F

Fresh beef:

Medium Rare	145° F
Medium	160° F
Well done	170° F

Fresh veal, lamb & pork:

Medium	160° F
Well done	170° F

Poultry:

Chicken, Turkey - whole	180° F
Chicken, Turkey - dark meat	180° F
Poultry - breast	170° F
Duck or goose	180° F

Stuffing:

Cooked alone or in bird	165° F

Ham:

Fresh (raw)	160° F
Fully cooked (to reheat)	140° F

Seafood:

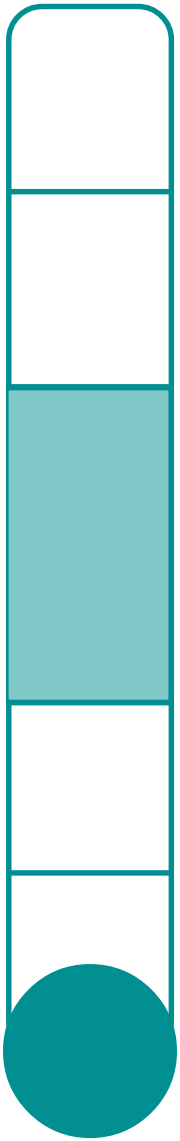
Most seafood	Cook to 145° F for 15 seconds
Fin fish	Cook until opaque & flakes easily with a fork
Clams, mussels & oysters	Cook until shells open
Scallops	Should turn milky white or opaque and firm
Shrimp, lobster & crab	Should turn red & flesh should become pearly opaque

HOW LONG WILL IT KEEP?

The following are storage guidelines for some perishable foods that often appear on America's dinner tables:

PRODUCT	STORAGE PERIOD In refrigerator	In freezer
Fresh meat (beef, veal, lamb, pork)		
Steaks and roasts	3-5 days	6-12 months
Chops	3-5 days	4-6 months
Roasts	3-5 days	4-12 months
Ground meats		
Beef	1-2 days	3-4 months
Pork, veal, lamb, turkey	1-2 days	3-4 months
Cured meats		
Lunch meat, opened	3-5 days	1-2 months
Sausage	1-2 days	1-2 months
Ham, fully-cooked slices	3-4 days	1-2 months
Meat Leftovers		
Gravy & meat broth	1-2 days	2-3 months
Cooked meat & meat dishes	3-4 days	2-3 months
Fish		
Lean (ex. cod)	1-2 days	6 months
Fatty (ex. blue, tuna, salmon)	1-2 days	2-3 months
Shellfish		
Shrimp, scallops, shucked clams, mussels	1-2 days	3-6 months
Live clams, crab, oysters, lobster, mussels	2-3 days	2-3 months
Cooked	3-4 days	3 months
Poultry		
Chicken or turkey, whole	1-2 days	12 months
Chicken or turkey, pieces	1-2 days	9 months
Giblets	1-2 days	3-4 months
Dairy products		
Cheese, hard (ex. Cheddar)	3-4 weeks	6 months*
Cheese, soft (ex. Brie)	1 week	6 months*
Milk	7 days	3 months
Eggs		
Fresh in shell	4-5 weeks	Don't freeze
Hard-boiled	1 week	Don't freeze well
Meat & vegetable casserole/ soups/stews	3-4 days	2-3 months

*Cheese can be frozen, but freezing affects the texture & taste.



212° Cooking temperatures destroy most bacteria. Time required to kill bacteria decreases as temperature increases.

165° Warming temperatures prevent growth but allow survival of some bacteria.

140° **DANGER ZONE:**
Temperatures in this zone allow for rapid growth of bacteria and production of toxins by some bacteria which cause food poisoning. (Don't leave food at room temperatures more than 2 hours.)

40° Cold temperatures permit slow growth of some bacteria that cause spoilage.

32° Freezing temperatures stop growth of bacteria, but may allow bacteria to survive and grow again when defrosting occurs.

0° Fahrenheit

CAUTION: Do not taste any food you suspect is spoiled or time-temperature abused. When in doubt, toss it out!

ABOUT FOOD POISONING

In most cases of foodborne illness (food poisoning), symptoms resemble intestinal flu and last a few hours to several days. But in cases of botulism, or when food poisoning strikes infants, the ill, the elderly, or those with compromised immune systems, life-threatening complications can result.

Microscopic organisms that cause foodborne illness are everywhere—in the air, soil, water, and in human and animal digestive tracts. Most are capable of growing undetected in food because they do not produce an "off" odor, color, or texture. The only way these microbes can be prevented from causing human illness is by handling and storing food safely.

Information about the bacteria, viruses, and molds that cause food poisoning are listed on the following pages.

BACTERIA

SALMONELLA

(Disease: Salmonellosis)

Source:

Spread when contaminated food (meat, poultry, eggs) is eaten raw or undercooked. Also, when cooked food comes in contact with contaminated raw food, or when an infected person prepares food.

Symptoms (after eating):

Onset: 6-48 hours; nausea, fever, headache, abdominal cramps, diarrhea, and vomiting lasting 2-7 days. Can be fatal to infants, the elderly, the infirm, and the immune-compromised.

Prevention:

Separate raw foods from cooked foods. Thoroughly cook meat, poultry, and eggs. Consume only pasteurized milk, dairy products, and egg nog. Don't leave food at room temperature over 2 hours. Refrigerate below 40 degrees F.

STAPHYLOCOCCUS AUREUS

(Disease: Staph)

Source:

Carried by people on skin, in boils, pimples, and throat infections; spread when carriers handle food. Staph bacteria produce toxins (poisons) at warm temperatures. Meat, poultry, salads, cheese, eggs, custards, and cream-filled desserts are susceptible foods.

Symptoms (after eating):

Onset: 1-8 hours; vomiting, diarrhea, nausea, and abdominal cramps lasting 1-2 days. Rarely fatal.

Prevention:

Cooking won't destroy staph poison, so practice good personal hygiene and sanitary food handling. Don't leave perishable food unrefrigerated over 2 hours. For quick cooling, place hot food in small containers no more than 4 inches deep; cover when cool and refrigerate.

CLOSTRIDIUM BOTULINUM

(Disease: Botulism)

Source:

Most common in low acid foods canned improperly at home. The presence of these bacteria or their poisons is sometimes signaled by clear liquids turned milky, cracked jars, loose or dented lids, swollen or dented cans, or an "off" odor. Recently, botulism has also been associated with low oxygen cooked foods (i.e. foil wrapped; vacuum packaged) which have been held at room temperatures for long periods of time.

Symptoms (after eating):

Onset: 4-72 hours; nervous system disturbances such as double vision, droopy eyelids, trouble speaking, swallowing, breathing. Untreated botulism can be fatal. If you or a family member have botulism symptoms, get medical help immediately. Then call health authorities.

Prevention:

Carefully examine canned goods (particularly those canned at home), and don't use any canned goods showing danger signs. Also, cook and reheat foods thoroughly, keep cooked foods hot (above 140 degrees F) or cold (below 40 degrees F) and divide large portions of cooked food into smaller portions for serving and cooling.

CLOSTRIDIUM PERFRINGENS

(Disease: Perfringens food poisoning)

Source:

"Buffet germ" that grows rapidly in large portions of food that cool slowly. It grows in chafing dishes which may not keep food sufficiently hot and in the refrigerator if food is stored in portions too large to cool quickly.

Symptoms (after eating):

Onset: 8-24 hours; diarrhea, gas pains, nausea, and sometimes vomiting lasting only a day. Usually mild, but can be serious in ulcer patients, the elderly, ill, or immune-compromised.

Prevention:

Keep food hot (above 140 degrees F) or cold (below 40 degrees F). Divide bulk cooked foods into small portions for serving and cooling. Reheat leftovers to at least 165 degrees F. Take special care with poultry, stew, soup, gravy, and casseroles.

CAMPYLOBACTER JEJUNI

(Disease: Campylobacteriosis)

Source:

Contracted from untreated drinking water, infected pets, and when contaminated meat, poultry, milk, or shellfish is eaten raw or undercooked.

Prevention:

Don't drink untreated water or unpasteurized milk. Wash hands, utensils and surfaces that touch raw poultry or meat. Thoroughly cook meat, poultry, and seafood.

LISTERIA MONOCYTOGENES

(Disease: Listeriosis)

Source:

Common in nature, food processing environments, and intestinal tracts of humans and animals. Spread in untreated water, unpasteurized milk and dairy products, raw meat and seafood, plus raw vegetables fertilized with infected manure.

Symptoms (after eating):

Onset: 2-30 days. Adults can develop fever, chills, and intestinal flu-like symptoms. Infants may vomit, refuse to drink, or have trouble breathing. Possible complications—meningitis, meningo-encephalitis, blood poisoning, spontaneous abortion, stillbirths. Rare, but can be fatal. Pregnant women, newborns, the elderly, infirm, and immune-compromised are most at risk.

Prevention:

Avoid raw milk and cheese made from unpasteurized milk. Follow *keep refrigerated* labels, observe *sell by* and *use by* dates, and thoroughly reheat frozen or refrigerated processed meat and poultry products before eating.

SHIGELLA BACTERIA

(Disease: Shigellosis)

Source:

Spread when human carrier with poor sanitary habits handles liquid or moist food that is not thoroughly cooked afterwards. Shigella multiply at room temperature. Sus-

Symptoms (after eating):

Onset: 1-7 days; abdominal pain, diarrhea, fever, sometimes vomiting, and blood, pus or mucus in stool; lasts 5-6 days. Most serious in infants, the elderly, infirm, or immune-compromised.

Prevention:

Practice good personal hygiene and sanitary food handling (wash hands thoroughly and frequently). Also, avoid leaving perishable foods unrefrigerated over 2 hours and cook food thoroughly (reheat to at least 165 degrees F). Do not prepare food when ill with diarrhea or vomiting.

ESCHERICHIA COLI O157:H7

(Disease: Hemorrhagic colitis)

Source:

Serotype 0157:H7 toxin contracted by drinking water which contains raw sewage (usually during travel). Also, can occur in raw or rare ground beef and unpasteurized milk.

Symptoms (after eating):

Onset: 3-4 days; severe abdominal cramps followed by diarrhea (often bloody), nausea, vomiting, fever lasting to 10 days. May require hospitalization. Possible complication—Hemolytic Uremic Syndrome (HUS), a urinary tract infection capable of causing kidney failure in children.

Prevention:

Don't drink untreated water or unpasteurized milk. Thoroughly cook food and reheat it to at least 165 degrees F. Don't leave perishable food unrefrigerated over 2 hours.

HEPATITIS A

(Disease: Infectious hepatitis)

Source:

Contracted when shellfish, harvested from water polluted by raw sewage, is eaten raw. Also spread by human carriers who prepare and serve uncooked food.

Symptoms (after eating):

Onset: 14-50 days; fatigue, fever, nausea, vomiting, abdominal cramps, appetite loss, followed by liver enlargement, jaundice, and darkened urine. May cause liver damage and death.

Prevention:

Avoid untreated drinking water and cook shellfish thoroughly. Also, practice good personal hygiene, handle all foods in a sanitary manner, and keep raw and cooked foods separated.

NORWALK-LIKE VIRUSES

(Disease: Viral gastroenteritis)

Source:

A group of viruses contracted when contaminated shellfish is eaten raw or partially cooked. Also, spread by infected people who prepare food when they are ill with these viruses.

Symptoms (after eating):

Onset: 24-48 hours; diarrhea, vomiting, nausea, abdominal cramps, fever, chills, and body aches.

Prevention:

Cook shellfish thoroughly. Practice good personal hygiene and handle food in sanitary manner. Do not prepare or serve food when ill with diarrhea or vomiting.

MOLDS

MYCOTOXINS

(Disease: Mycotoxicosis)

Source:

Many foods are susceptible to a wide variety of molds. Some mycotoxins (poisons produced by molds) can be harmful if consumed in large amounts. When it occurs, mycotoxicosis is usually traced back to beans, peanuts, corn, and other grains that have been stored in warm moist places.

Symptoms (after eating):

May cause liver and/or kidney disease. (This depends on the amount of mycotoxin and length of exposure.)

Prevention:

Store foods properly, and check for visible mold and "off" color, odor, or texture. Discard contaminated food and clean container or storage area. (Hard cheeses, salami, or dry cured country ham may be salvaged by cutting out an inch of product on all sides and below the moldy area.)

ABOUT PROTOZOA

Protozoa exist in the intestinal tract of humans and are expelled in feces. Contamination of foods can occur when sewage is used to enrich garden or farm soil, and as a result of hand-to-food contact during food preparation. Chief sources are untreated water and foods that require much handling.

Giardiasis and *Amebiasis* (Amoebic Dysentary) are human diseases caused by protozoa. Symptoms include diarrhea, abdominal pain, nervousness, loss of weight, and fatigue. Anemia may also be present. Illness can be prevented by sanitary handling of foods, avoidance of raw fruits and vegetables in areas where the protozoa are common, and proper sewage disposal.

ABOUT PARASITES

Organisms that depend on nutrients from a living host to complete their life cycle are called parasites. Trichinosis and Toxoplasmosis are two human diseases caused by parasites. The source of Trichinosis is undercooked pork or game infected by *Trichinella spiralis* larvae. Thorough cooking kills the larvae. Fecal waste from infected cats is the source of Toxoplasmosis. It is prevented by sanitary food handling practices and thorough cooking of poultry and meat (particularly lamb and pork). Because newborns are at greatest risk, pregnant women should wash hands thoroughly after petting cats and avoid changing cat litter boxes.

MORE ABOUT FOOD SAFETY

If you would like additional copies of this booklet or other information on food safety, write or call:

VDACS Food Safety Task Force
P.O. Box 1163
Richmond, VA 23218
1-800-552-9963

or check the web site:

www.vdacs.state.va.us/foodsafety

FOOD SAFETY TASK FORCE

The Food Safety Task Force was established by the Virginia Department of Agriculture and Consumer Services (VDACS) to address food safety issues to the industry and the public. The Task Force has developed a food safety exhibit that is used at industry and consumer events statewide. Educational items have also been developed for teachers and students.

The Food Safety Task Force is available to provide educational programs for your organization or school. Contact the Task Force at 1-800-552-9963.

Some of the items available for teachers and students can be found on the VDACS web site, such as a food safety coloring book and bookmarks. These can be downloaded and copied for classroom use.

www.vdacs.state.va.us/fdsafety

Food Safety Coloring Book:
Eight pages of coloring and games with a food safety message.

Food Safety Bookmarks:
Basic food safety tips illustrated for children.

Other authorities involved with food safety are listed below. In special cases, you may want to call one of these agencies.

Virginia Department of Agriculture (VDACS)

1100 Bank Street, Richmond, VA 23219

Food Safety Program
(804) 786-3520

Regulates grocery stores, supermarkets, manufacturing/processing operations , and food warehouses.

Virginia Department of Health (VDH)

1500 E. Main Street, Room 115, Richmond, VA 23219

Office of Environmental Health Services
(804) 786-1750

Regulates food service establishments and investigates outbreaks of foodborne illness

U. S. Department of Agriculture (USDA)

Food Safety & Inspection Service
Washington, DC 20250

Meat & Poultry Hotline
1-800/535-4555

FDA's Food Information & Seafood Hotline
1-888-SAFEFOOD

Cooperates with the Virginia Department of Agriculture and Consumer Services to ensure the safety of meat and poultry; inspects eggs; and establishes grading standards for product quality (i.e., USDA Grade A)

Food Safety Web Sites

USDA ..... www.usda.gov
FDA ..... www.fda.gov
EPA ..... www.epa.gov
VDH ..... www.vdh.state.va.us

VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Virginia Department of Agriculture and Consumer Services

1100 Bank Street, Richmond, VA 23219

www.vdacs.state.va.us/fdsafety

Division of Consumer Protection

804/786-2563

Food Safety Task Force

1-800-552-9963